

REMARKS

We are in receipt of the Office Action dated July 18, 2003, and the above amendment and following remarks are made in light thereof.

Claims 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 30-42, 44-47, and 49-56 are pending in the application, with claims 3, 6, 9, 12, 15-29, 43, and 48 having been previously canceled.

Pursuant to the Office Action, claims 52-56 are rejected under 35 U.S.C. 112 for indefiniteness. Claims 1, 2, 4, 5, 10, 11, 30, 31, 33, 34, 39-42, 44-47, 49-52, 55 and 56 are rejected under 35 U.S.C 103(a) as being unpatentable over Zhang et al. 5,614,733 together with Saraswat et al. 5,250,518. Claims 53 and 54 are rejected as being obvious over Zhang et al. '733 together with Saraswat et al. further in view of Yamazaki et al. 6,160,271. Claims 1, 2, 7, 8, 30, 31, 36, 37, 49 and 50 stand rejected for being obvious over Zhang et al. 5,648,277 together with Saraswat et al. Claim 38 stands rejected for being obvious over Zhang et al. '277 together with Saraswat et al. and Yamazaki et al. Claims 1, 2, 4, 5, 10, 11, 13, 14, 30-35, 39-42, 44-47, 49, and 51-56 stand rejected for being obvious over claims 1, 2, 4, 5, 10, 11, 13, 14, 30-35, 39-42, 44-47, 49, and 51-56 stand rejected for being obvious over Yamazaki et al. together with Saraswat et al.

In the present specification, page 3, lines 3-14, silicon germanium which is narrow in energy band gap as compared to that of silicon can form a channel region with high carrier density. This results in the advantage of providing higher field effect mobility, as compared to the case of using silicon for the active layer. However, the off current is increased correspondingly to the increase of carrier density, as compared to a TFT with silicon. Therefore, the semiconductor devices called for in the claims use silicon and silicon germanium properly. However, Saraswat et al. do not consider that the

off current of silicon germanium is higher than the off current of silicon. Therefore, it is improper to combine Zhang et al. '733 and Saraswat et al., since Saraswat et al. do not teach the appropriate use of silicon and silicon germanium. In addition, Zhang et al. '733 disclose that it is necessary that the TFTs used in the peripheral circuit and the TFTs used in the pixel circuit are formed on the same substrate at the same time (see col.1, line 50-61 in Zhang et al. '733). Therefore, there is no suggestion to combine the teachings Zhang et al. '733 and Saraswat et al. to obtain the claimed invention.

With respect to the rejections of claims 53 and 54 under 35 U.S.C 103(a) as being unpatentable over Zhang et al. '733 together with Saraswat et al. and Yamazaki et al., since these claims are dependent from claim 51, and claim 51 is distinguishable over Zhang et al. '733 together with Saraswat et al., the dependent claims 53 and 54 are also allowable.

With respect to the rejection of claims 1, 2, 7, 8, 30, 31, 36, 37, 49 and 50 under 35 U.S.C 103(a) as being unpatentable over Zhang et al. '277 together with Saraswat et al., this rejection is overcome for the same reasons that claims 1, 2, 4, 5, 10, 11, 30, 31, 33, 34, 39-42, 44-47, 49 and 50 are not obvious over Zhang et al. '733 together with Saraswat et al. that is set forth above.

With respect to the rejections of claim 38 as being unpatentable over Zhang et al. '277 together with Saraswat et al. and Yamazaki et al., since this claim is dependent from claim 36, and claim 36 is distinguishable over Zhang et al. '277 together with Saraswat et al., the dependent claim 38 is also allowable.

With respect to the rejections of claim 1, 2, 4, 5, 10, 11, 13, 14, 30-35, 39-42, 44-47, 49 and 51-56 as being unpatentable over Yamazaki et al. together with Saraswat et al.,

this rejection is overcome for the same reasons that claims 1, 2, 4, 5, 10, 11, 30, 31, 33, 34, 39-42, 44-47, 49 and 50 are not unpatentable over Zhang et al. '733 together with Saraswat et al. set forth above.

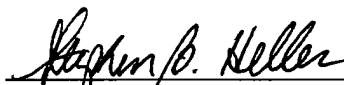
With respect to the rejections of claim 50 under 35 U.S.C 103(a) as being unpatentable over Yamazaki et al. together with Saraswat et al. and Zhang et al. '277, since this claim is dependent from claim 49, and claim 49 is distinguishable over Yamazaki et al. together with Saraswat et al. and Zhang et al. '277, the dependent claim 50 is also allowable.

With respect to the rejection of claims 52 and its dependent claims 54 and 56 for indefiniteness, claim 52 has been amended to delete the "said $\text{Si}_{1-x}\text{Ge}_x$ " term for which there was no antecedent basis.

Applicant believes that the application is now in condition for allowance, and an early office action in this regard is earnestly solicited.

Respectfully submitted,

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